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College Students' Use of Communication Technology with Parents: Influences of Distance, Gender, and Social Presence

Meagan A. Ramsey
University of Utah

Ann M. Oberhauser
Iowa State University, annober@iastate.edu

Amy L. Gentzler
West Virginia University

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Abstract

Information and communication technology (ICT) has significantly affected the way people maintain relationships despite spatial and other social and economic barriers. In the case of college students and their parents, ICT is a means of maintaining this parent-child relationship when students travel far from home to attend school. However, little research has examined college students' use of various types of technology for communicating with their parents and how it may affect their relationship with their parents. This chapter analyzes the socio-spatial aspects of how college students use a variety of communication channels (cell phones, text messaging, email, and social networking sites) to connect with their parents using both quantitative and qualitative methods. Specifically, the study addresses: 1) the impact of geographical distance between a college student and their parent on their use of communication technology and the qualities of their relationship, 2) how the gender of both the students and their parents influences the amount and type of communication technology students use with their parents, and 3) whether or not students' social presence mediates the association between using particular technologies to communicate with their parents and their relationship with their parents. Overall, this chapter contributes to our understanding of the social and spatial aspects of communication technologies within the parent-child relationship and has important implications for universities and families with students transitioning to college.

Disciplines

Community Psychology | Gender and Sexuality | Interpersonal and Small Group Communication | Social Media

Comments

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Meagan A. Ramsey, Ann M. Oberhauser, Amy L. Gentzler

10 College Students' Use of Communication Technology with Parents: Influences of Distance, Gender, and Social Presence

Abstract: Information and communication technology (ICT) has significantly affected the way people maintain relationships despite spatial and other social and economic barriers. In the case of college students and their parents, ICT is a means of maintaining this parent-child relationship when students travel far from home to attend school. However, little research has examined college students' use of various types of technology for communicating with their parents and how it may affect their relationship with their parents. This chapter analyzes the socio-spatial aspects of how college students use a variety of communication channels (cell phones, text messaging, email, and social networking sites) to connect with their parents using both quantitative and qualitative methods. Specifically, the study addresses: 1) the impact of geographical distance between a college student and their parent on their use of communication technology and the qualities of their relationship, 2) how the gender of both the students and their parents influences the amount and type of communication technology students use with their parents, and 3) whether or not students' social presence mediates the association between using particular technologies to communicate with their parents and their relationship with their parents. Overall, this chapter contributes to our understanding of the social and spatial aspects of communication technologies within the parent-child relationship and has important implications for universities and families with students transitioning to college.

10.1 College Students' Use of Communication Technology with Parents: Influences of Distance, Gender, and Social Presence

The widespread use of information and communication technology (ICT) in society impacts how we maintain relationships and connections with others (Kim, Kim, Park, & Rice, 2007). This is important for college students and their parents, as college students may travel far from home to attend school. However, relatively little research has analyzed the use of ICT among college students and parents. Given the importance of these communication technologies for college students, this research aims to understand how particular factors influence students' use of these technologies to maintain relationships. This chapter examines the effect of geographical distance between college students and their parents on their use of

ICT and relationships, how ICT use may vary by gender of both the college students and their parents, and how students' social presence, or their perceived salience or presence of the other person, felt during ICT use influences their relationships with their parents.

10.2 Parent-Child Relationships and ICT Use

Studies on the impact of the internet and mobile communication on social relations tend to find that increased online social communities often complement offline social interaction (Crang, Crosbie, & Graham, 2007). It seems that this may especially be the case for parents and students who live long distances from each other, as they may rely on ICT more heavily to maintain their relationship if frequent face-to-face contact is not practical or possible. In support of this, research indicates that students communicate with their parents quite frequently, averaging 13 times a week when looking across multiple types of ICT (Hofer, 2008). Additionally, our research indicates that almost 100% of students use the phone to communicate with their parents, and that rates of student-parent communication by text and SNS are increasing (to 85% and 45% in 2011, respectively). However, e-mail communication with parents is declining (Ramsey, Gentzler, Morey, Oberhauser, & Westerman, 2013).

Our previous research has also revealed that the type of ICT that students use with their parents is related to unique relationship qualities. For instance, early research indicated that students who used a SNS with their parents were lonelier, more anxiously attached, and had more conflict with their parents (Gentzler, Oberhauser, Westerman, & Nadorff, 2011), but more recent research indicates that using an SNS with parents is no longer associated with poor outcomes (Ramsey et al., 2013). In addition, students' frequent telephone communication with parents is consistently associated with positive relationship qualities (Chen & Katz, 2009; Gentzler et al., 2011; Ramsey et al., 2013; Wei & Lo, 2006). Overall, communication between parents and college students (particularly using certain ICT channels) may enable students to maintain close, positive relationships with parents, which research suggests may help students more smoothly transition to college (Mattanah, Lopez, & Govern, 2011; Wintre & Yaffe, 2000). Although, an opposing concern noted by Hofer and Moore (2010) is that ICT could result in students' overreliance on parents. Thus it may be useful for colleges and universities to also be mindful that ICT could actually inhibit students' developing independence. The following sections outline how distance, gender, and social presence influence students' and parents' ICT use and relationship qualities.

10.3 Distance

The increased mobility of ICT allows students and parents to accomplish relational goals (e.g., keeping in contact) better than past technologies, as the increased mobility allows people to interact anywhere, and thus, reduces the time necessary for relational maintenance (e.g., engaging in activities that help preserve connections with close social partners) to take place (Castells, 2010). This mobility of today's ICT has clear significance for those trying to connect across large distances, including many college students and their parents. Recent research suggests that students who live very far from their parents choose different forms of ICT (e.g., Skype, email) to maintain the relationship (Yang, Brown, & Braun, 2013). Thus, we expected that distance will similarly influence the amount and type of ICT use that college students use with their parents. Additionally, we explored whether or not distance was related to students' relationships with their parents.

10.4 Gender

Many studies examine how socially constructed gender roles impact the use of communication technologies (e.g., Castells, Fernandez-Ardevol, Qiu, & Sey, 2007). Specifically, rates of ICT use differ by gender, as women tend to use online communication more than men (Hartsell, 2005), and tend to use the phone to contact their family more often as well (Chen & Katz, 2009; Wei & Lo, 2006). Thus students' ICT use is related to gender roles in society. Moreover, research suggests that it is important to consider the gender of the parent in addition to that of the student. For example, adolescents' SNS use with their family is related to their reported warmth and support with their fathers but not their mothers (Coyne, Padilla-Walker, Day, Harper, & Stockdale, 2013). In addition, college students are more likely to report wanting more communication with fathers than they currently have compared to their desired contact with mothers (Hofer, 2008). Therefore, it is necessary to take both student and parent gender into account when examining the influences of gender on ICT use.

10.5 Social Presence

Social presence, which refers to how salient or physically present the other person seems during the communication process (Biocca, Harms, & Burgoon, 2003; Short, Williams, & Christie, 1976), is another factor that may play a role in students' ICT use and relationships with their parents. Many factors may affect the amount of social presence a person feels during a particular interaction such as the features of the particular technology used, the relationship, the distance between the individuals, and type of communication used (Biocca et al., 2003; Gooch & Watts, 2013). We expect

that social presence may be one reason that college students' use of ICT is related to their relationship quality with that parent. In other words, students who more frequently use ICT with their parent may report higher-quality relationships with them in part because they can feel connected and present during their communications. In our study we examine the role of social presence across multiple types of ICT, which is important because different types of communication may naturally elicit more presence (Biocca et al., 2003; Gooch & Watts, 2013).

10.6 Current Study

In the current study, we used mixed methods to examine how socio-spatial dimensions influence college students' use of phones, text messaging, email, and SNS to maintain relationships with their parents. The combination of quantitative and qualitative data from the surveys and focus groups gave us insight to the broad patterns and relationships, as well as the personal experiences that individual students shared with us about their use of ICT. The findings from both of these methods inform the results and the discussion of our research throughout this paper. We had three major research questions: 1) does the geographical distance between a college student and their parent influence their use of ICT or the qualities of their relationship?; 2) is the amount and type of ICT students use with their parents impacted by the gender of both the students and their parents?; and 3) does students' social presence mediate the association between using particular technologies to communicate with their parents and their relationship with their parents?

10.7 Method

10.7.1 Participants and Procedure

Focus group. Twenty-three students (5 females, 18 males) participated in the focus group portion of this study in 2009. An average of 7 students participated in each of the three focus group discussions. Nearly half of the participants were freshmen and were recruited from an introductory human geography class. The discussions were organized into the following three topics: 1) students' backgrounds such as year in college, major, and hometown; 2) the type, frequency of, and reason for their use of ICT, including family members with whom they communicate; and 3) students' opinions about and effectiveness of ICT in their relationships. Data from the focus groups were recorded, transcribed, and analyzed using QSR NVivo software. The analysis included the development of themes that corresponded with the research questions outlined above and provided a structure to identify the social relationships and impact of ICT.

Online survey. Two hundred and sixteen college students (171 females, 45 males) ages 18 to 22 ($M = 19.52$, $SD = 1.08$) participated in the online portion of this study in 2011. The racial-ethnic distribution of the final sample was 93% Caucasian, 3% African-American, 1% Native American, 1% Hispanic, 1% Asian, and 1% other. Participants were recruited from general psychology classes and received extra credit for participating. Participants first identified the family member they were closest to (180 mothers, 36 fathers) and then answered questions about their communication and relationship with this family member. These 216 students came from a larger sample of 302 participants. We excluded 22 participants ages 22 and older because we expected that they may have different patterns of ICT use with their parents, and 64 students for identifying a different family member (other than their parent) as closest.

10.7.2 Online Survey Measures

Use of ICT. Participants rated their frequency of using phone, e-mail, text messaging, and SNS to communicate with their parent on an 8-point scale ranging from 0 (never) to 7 (several hours a day).

Distance. Participants reported the location of their parent's home and this was then coded as miles to the town from where the university is located. Two extreme outliers that were more than three standard deviations away from the mean distance (1,203 and 4,231 miles) were recoded to the next highest amount (888 miles).

Social presence. Participants reported on two items that assessed social presence for each type of ICT. Participants rated each item on a 7-point Likert scale ranging from 1 (not at all) to 7 (very much). The items were, "When you interact with your closest family member using [ICT], to what extent do you feel like you are actually with your closest family member?" and "When you interact with your closest family member using [ICT], to what extent do you imagine being with your closest family member face-to-face?" The two items were highly correlated for each type of ICT (phone ($r = .78$, $p < .001$), text ($r = .85$, $p < .001$), e-mail ($r = .88$, $p < .001$), and SNS ($r = .88$, $p < .001$)) and were averaged to create one social presence subscale for each form of communication.

Relationship with parents. Participants completed five scales (3 items per scale) of the Network of Relationships Inventory (Furman & Buhrmester, 1985) which assessed participants' relationship satisfaction, intimacy, support, instrumental aid, and conflict with their parent. Participants rated all 15 items on a 5-point Likert scale ranging from 1 (little to none) to 5 (the most). Examples include: "How satisfied are you with your relationship with your closest family member?" (satisfaction, $\alpha = 0.93$); "How much do you share your secrets and private feelings with your closest family member?" (intimacy, $\alpha = 0.88$); "How much do you turn to your closest family member for support with personal problems?" (support, $\alpha = 0.87$); "How much

does your closest family member help you when you need to get something done?” (instrumental aid, $\alpha = 0.84$); and “How much do you and your closest family member disagree and quarrel?” (conflict, $\alpha = 0.88$).

10.8 Results

10.8.1 Focus Group Themes

Several themes emerged from the focus groups that relate to our questions about types of ICT communication, distance, and social presence in their interactions with their parents. First, several students commented on the use of various forms of ICT in communicating with their parents. Specifically, they are more apt to text about logistics or appointments, but use phone calls for more in-depth or personal conversations. For example, one student reported:

I won't sit there and text them all day in class, but they know how, and if they want to send me something that's imperative, ya know, every once in awhile I'll get a text message from my mom that says "You have a doctor's appointment this day" or "You need to get to the dentist" or "you need to call me about something important later."

In this case, the student's mother communicates with her son to remind him about various things. However, several students also mentioned the lower level of access to and use of particular forms of ICT among their parent's generation. "It's like my parents and technology, they have no idea how to text, so I've lucked out so far." "Like, I don't text my parents, I just call them at home. They don't really like if I text them at all." "My mom doesn't know how to text, so I always have to call her."

Geographical issues were also mentioned among students in the focus groups in that some of their parents lived in areas that made communication with them difficult. Specifically, one student said, "Where I come from, my hometown, I don't have cell phone service." This geographical barrier may affect students' communication with their parents and indicates that distance may not be the only geographical factor in college students' use of ICT with their parents.

Although students did not use the term social presence, they also highlighted key issues pertaining to this construct. Some students lamented the lack of "personal immediacy between people" through texting and other forms of social media. As one student stated:

There's nothing that compares with sitting down and talking to her (student's mother) face to face or getting a hug from her. Ya know, there's nothing that can replace that. ... But, I do feel that Facebooking and texting ... and all that; I think it's almost kind of desensitizing us a little bit to like human emotion.

10.8.2 Influence of Distance

Using the online survey data, we first examined if the geographical distance between a college student and their parent influences their use of ICT. Bivariate correlations revealed that distance was associated with phone use between parents and students, but not with use of text, SNS, or email (see Table 1). Specifically, students living farther from their parents reported less phone use with them. We also examined if the geographical distance between a college student and their parent was related to the qualities of their relationship. However, bivariate correlations revealed that distance was not associated with parent-child relationship qualities.

Table 10.1. Correlations among key variables

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 |
|------------------|--------|--------|--------|--------|--------|--------|--------|--------|------|---------|--------|--------|------|
| 1. Distance | - | | | | | | | | | | | | |
| 2. Phone Use | -.18** | - | | | | | | | | | | | |
| 3. Text Use | .02 | .21** | - | | | | | | | | | | |
| 4. SNS Use | .13 | -.01 | .18** | - | | | | | | | | | |
| 5. Email Use | .08 | -.01 | -.07 | .08 | - | | | | | | | | |
| 6. Phone SP | -.03 | .16* | -.03 | .04 | .12 | - | | | | | | | |
| 7. Text SP | -.03 | .14 | .26*** | .22** | .18* | .71*** | - | | | | | | |
| 8. SNS SP | .04 | .01 | .01 | .58*** | .19* | .47*** | .70*** | - | | | | | |
| 9. Email SP | .02 | -.10 | -.04 | .37*** | .55*** | .38*** | .57*** | .70*** | - | | | | |
| 10. Satisfaction | -.02 | .35*** | .19** | -.02 | -.05 | .15* | .13 | .00 | -.05 | - | | | |
| 11. Intimacy | -.02 | .45*** | .13 | .06 | .03 | .21** | .17* | .06 | .03 | .55*** | - | | |
| 12. Support | -.08 | .50*** | .13 | .02 | .04 | .14* | .14 | .02 | -.02 | .70*** | .78*** | - | |
| 13. Aid | -.01 | .44*** | .11 | -.07 | .13 | .18* | .17* | .01 | .03 | .61*** | .64*** | .80*** | - |
| 14. Conflict | -.03 | -.07 | -.05 | .04 | .05 | -.07 | -.03 | .08 | .15 | -.30*** | -.01 | -.16* | -.10 |

Note. SP = Social presence. * $p < .05$, ** $p < .01$, *** $p < .001$.

10.8.3 Influence of Student and Parent Gender

To examine effects of parent and student gender on the use of the various types of communication technology, a 2 (parent gender) by 2 (student gender) MANOVA was conducted. There was a significant main effect of parent gender (Wilks' Lambda (4, 203) = .95, $F = 2.60$, $p = .038$, $\eta_p^2 = .049$). This effect was qualified by a significant

interaction between parent and student gender (Wilks' Lambda (4, 203) = .94, $F = 3.21$, $p = .014$, $\eta_p^2 = .060$). Follow up ANOVAs using Bonferroni corrected alphas revealed that females were more likely to text their fathers than males ($F(1, 206) = 5.71$, $p = .018$, $\eta_p^2 = .027$). Additionally, males were more likely to use text messaging ($F(1, 206) = 5.62$, $p = .019$, $\eta_p^2 = .027$) and SNS ($F(1, 206) = 9.10$, $p = .003$, $\eta_p^2 = .042$) to communicate with their mothers than with their fathers (see Figure 10.1).

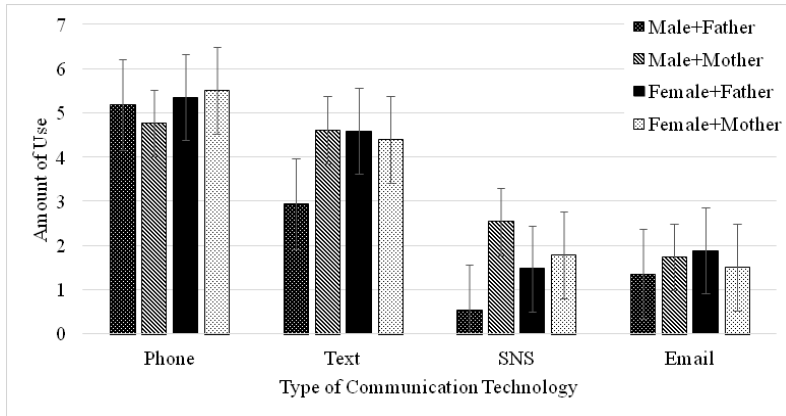


Figure 10.1. Amount of using each type of communication technology by student and parent gender.

* $p < .05$

10.8.4 Influence of Social Presence

To examine if students' social presence mediated the association between using particular technologies to communicate with their parents and their relationship with their parents, we used PROCESS with SPSS (Hayes, 2013) to assess indirect effects. Separate regressions were conducted for each type of ICT (phone, text, SNS, email) and for each type of relationship outcome (satisfaction, intimacy, support, aid, conflict). For each regression, the amount of a particular type of ICT was the predictor, the social presence students felt for that particular ICT was the mediator, and a quality of the parent-child relationship was the outcome. Although increased phone use with parents was directly associated with greater satisfaction, intimacy, support, and, aid, and more frequent text communication was directly associated with satisfaction and support, only two significant indirect effects of social presence emerged (as evidenced by the 95% confidence intervals associated with the bootstrapped estimates (5,000 samples) that did not contain zero). First, there was an indirect effect of phone-related social presence on the association between amount of phone use and intimacy with parents ($b = .025$, $SE = .018$, 95% CI: .001-.074). There was also an indirect effect of text-related social presence on the association between students' amount of text communication with their parents and instrumental aid from parents ($b = .022$, $SE = .014$, 95% CI: .000-.058).

10.9 Discussion

This analysis of the social and spatial dynamics of ICT provides a more thorough understanding of the factors that influence ICT use among college students and their parents in contemporary society. This study advances the literature on the effects of geographical distance, parents' and students' gender, and feelings of social presence on students' use of ICT to connect with their parents and students' relationships with parents. Studies such as these are an important step toward understanding the role of parental communication in students' transition to and satisfaction in college. College students' adjustment is predicted by having supportive relationships with parents but also developing healthy levels of individuation from them (Mattanah, Hancock, & Brand, 2004; Mattanah et al. 2011). Moreover, students' social and emotional adjustment predicts college retention (Gerdes & Mallinckrodt, 1994). Thus, gaining a better understanding of how students use ICT to maintain healthy levels of communication and closeness with parents may allow us to better predict their success and retention in college.

10.9.1 Distance and Students' and Parents' ICT Use and Relationships

The spatial dimensions of ICT are important in young adults' use of this form of communication in order to maintain relationships with their parents. Specifically, we found that students whose parents lived closer to the university reported talking with their parent more on the phone. This finding is in line with other research indicating that students tend to communicate more with local relatives than with distant relatives using the phone and other forms of ICT (Baym, Zhang, & Lin, 2004; Quan-Haase, 2007). There may be several explanations for this finding. First, it is possible that young adults who move far from home to attend college are different than students who choose to stay closer to their family (Mattern & Wyatt, 2009). However, in opposition to past research (Flanagan, Schulenberg, & Fuligni, 1993), we found that distance was not associated with better or worse parent-student relationship qualities. It is also plausible that students who live closer to their parents call them more often for practical reasons (e.g., to ask when dinner is ready, to let them know they are coming home) than students living far from their parents. The issue raised in the focus groups regarding lack of cell phone service highlights a plausible reason for this finding. It is possible that some students' parents live in an area where cell phone service is lacking, and that cell phone accessibility is impeding students' communication with family members. The lack of reliable cell phone and Internet service is not uncommon in rural parts of West Virginia where a significant portion of the student who participated in this research live.

It is also surprising that distance did not influence usage rates of other types of ICT (email, text, SNS). Perhaps these online forms of communication technology

have widespread use regardless of distance, or perhaps other factors are more critical determinants of students' use of particular types of ICT with parents (Agosto, Abbas, & Naughton, 2012). For instance, in our focus groups, several students mentioned the lower level of access to and use of particular forms of ICT among their parent's generation. These comments illustrate the generational differences in use of ICT, as well as some of the distance factors that relate to use of ICT discussed above (Castells et al., 2007).

10.9.2 Gender and Students' and Parents' ICT Use

This research also examined parent-student relationships as being related to gender identities and norms, and indicated that it is important to take this system into consideration when assessing how students and parents use ICT. Specifically, female students were more likely to use text messaging to communicate with their fathers than male students. This finding is similar to other relevant literature that girls use more SNS to communicate with family in general (Coyne et al., 2013), although it is unclear why this result only emerged for text messaging and not for other types of ICT. Male students were also much less likely to use text messaging or a SNS to communicate with their fathers than with their mothers. This finding is consistent with research indicating that college students communicate with their mothers more than their fathers (Noller & Bagi, 1985). However, it is not clear why this finding only holds for males and why it is specific to text and SNS communication. Although our findings do not replicate past literature on gender differences in phone use with family (Chen & Katz, 2009; Wei & Lo, 2006), several new interesting trends emerged.

10.9.3 Indirect Effects of Social Presence on ICT Use and Relationship Qualities

Social presence has also been identified as an important influence on ICT use (e.g., Biacco et al., 2003), and we expected that it would also affect qualities of the parent-student relationship. In line with our expectations, there was a significant indirect effect of social presence on the association between phone use and intimacy. Thus, one reason that more frequent phone use is linked to greater intimacy is due to feeling more connected and present with the parent during the conversation. Social presence may directly promote intimacy if people feel more willing to be open and self-disclose. Researchers have even indexed social presence using scales of intimacy (e.g., Burgoon & Hale, 1987). However, given our cross-sectional data, the direction could be reversed where intimacy drives feelings of presence and the resulting choice to talk by phone more frequently. Surprisingly, social presence did not mediate the association between phone use and other positive relationship outcomes (satisfaction, support, aid) that has been linked to greater phone frequency (e.g., Gentzler et al., 2011; Ramsey et al.,

2013). Other factors may be more relevant to these outcomes such as feeling positively validated during the conversations rather than just feeling social presence.

Social presence also mediated the association between text use and aid. Again, it is unclear why presence only mediated this outcome, but parents may take advantage of the convenience of text communication and only use texting with their college student for practical reasons or reminders (Smith, Nguyen, Lai, Leshed, & Baumer, 2012). Data from the focus group discussions expanded these findings by revealing that many students' parents prefer phone communication, some parents are unable to text or use SNS, and email is seen as too formal for casual conversations. Thus, texting between today's college students and parents may be reserved for particular types of communication and messages. Due to the specificity with which text messaging may be used between parents and students, perhaps students feel like their parents are physically there with them during those messages.

10.10 Limitations and Future Directions

Despite the many strengths of this study, there are also several limitations that should be considered. First, although we propose directional models, we cannot be certain of the direction given the correlational and cross-sectional nature of the data. For example, we propose that use of certain communication technologies and the social presence felt for the various forms of ICT influence relationship qualities such as intimacy, but it is also possible that qualities such as intimacy actually dictates ICT use as outlined above, or that the associations are bidirectional.

There are also important variables and factors that were not measured. For instance, video conferencing is another form of ICT that plays an important role in connecting student and parents across long distances (Furukawa & Driessnack, 2013). Also, location may be particularly important for studies on communication technology, as one student in our focus group pointed out that some areas may not have easy access to certain forms of ICT. In relation to this, our research does not allow us to make inferences about how ICT use may change as students transition from living with parents during high school to living away from home during college. Longitudinal research is needed to examine how students' and parents' ICT use changes during this transitional phase.

This research is highly relevant to both the changing use of ICT in society, as well as the role of mobile communication in maintaining relationships among family across long distances. Our study focuses on the use of ICT among college students and their parents, particularly in the early years of transitioning from dependence on family support and guidance to independence and autonomous decision-making. This research has important implications for universities and families that can help smooth their students' transitions from home to college by modulating their use of ICT. For example, it may be important for many families to shift their use of ICT

by relying on new forms that fit with both party's preferences. Additionally, some parents and students may even be encouraged to rely on ICT less frequently if the ease and availability of ICT promotes students' dependency on parents (e.g., for advice on managing interpersonal conflicts, professional advice, and help with classwork) and inhibits autonomous behaviors in the students (Hofer & Moore, 2010). If universities understand what factors influence parent-student ICT use (e.g., distance, gender) and how parents and students can use ICT to promote social presence and aid in the maintenance of a positive and healthy relationship, then schools can begin using this information to educate parents and students during events such as freshman orientation. The successful use of ICT in promoting and maintaining quality parent-child relationships may then enhance students' adjustment to and success in college and aid in their retention.

References

- Agosto, D. E., Abbas, J., & Naughton, R. (2012). Relationships and social rules: Teens' social network and other ICT selection practices. *Journal of the American Society for Information Science and Technology*, 63(6), 1106-1124.
- Baym, N. K., Zhang, Y. B., & Lin, M. C. (2004). Social interactions across media: Interpersonal communication on the internet, telephone and face-to-face. *New Media and Society*, 6(3), 299-318.
- Biocca, F., Harms, C., & Burgoon, J. K. (2003). Toward a more robust theory and measure of social presence: Review and suggested criteria. *Presence*, 12(5), 456-480.
- Burgoon, J. & Hale, J. L. (1987). Validation and measurement of the fundamental themes of relational communication. *Communication Monographs*, 54, 19-41.
- Castells, M. (2010). *The rise of the network society*. New York: Blackwell.
- Castells, M., Fernandez-Ardevol, M., Qiu, J. L., & Sey, A. (2007). *Mobile communication and society: A global perspective*. Cambridge, MA: MIT Press.
- Chen, Y. F., & Katz, J. E. (2009). Extending family to school life: College students' use of the mobile phone. *International Journal of Human-Computer Studies*, 67(2), 179-191.
- Coyne, S. M., Padilla-Walker, L. M., Day, R. D., Harper, J., & Stockdale, L. (2013). A friend request from dear old dad: Associations between parent-child social networking and adolescent outcomes. *Cyberpsychology, Behavior, and Social Networking*. Advance online publication.
- Crang, M., Crosbie, T., & Graham, S. (2007). Technology, time-space, and the remediation of neighbourhood life. *Environment and Planning A*, 39, 2405-2422.
- Flanagan, C., & Schulenberg, J. (1993). Residential setting and parent-adolescent relationships during the college years. *Journal of Youth and Adolescence*, 22(2), 171-189.
- Furman, W., & Buhrmester, D. (1985). Children's perceptions of the personal relationships in their social networks. *Developmental Psychology*, 21(6), 1016-1024.
- Furukawa, R., & Driessnack, M. (2013). Video-mediated communication to support distant family connectedness. *Clinical Nursing Research*, 22(1), 82-94.
- Gentzler, A. L., Oberhauser, A. M., Westerman, D., & Nadorff, D. K. (2011). College students' use of electronic communication with parents: Links to loneliness, attachment, and relationship quality. *Cyberpsychology, Behavior, and Social Networking*, 14(1-2), 71-74.
- Gerdes, H., & Mallinckrodt, B. (1994). Emotional, social, and academic adjustment of college students: A longitudinal study of retention. *Journal of Counseling and Development*, 72(3), 281-288.

- Gooch, D. & Watts, L. (2013). Social presence and the void in distant relationships: How do people use communication technologies to turn absence into fondness of the heart rather than drifting of the mind? *AI & Society*. Advance online publication.
- Hartsell, T. (2005). Who's talking online? A descriptive analysis of gender and online communication. *International Journal of Information and Communication Technology Education*, 1(1), 42-54.
- Hayes, A. F. (2013). Introduction to mediation, moderation, and conditional process analysis: A regression-based approach. New York: Guilford Press.
- Hofer, B. K. (2008). The electronic tether: Parental regulation, self-regulation, and the role of technology in college transitions. *Journal of the First-year Experience and Students in Transition*, 20(2), 9-24.
- Hofer, B. K., & Moore, A. S. (2010). *The iConnected parent: Staying close to your kids in college (and beyond) while letting them grow up*. New York: Simon and Schuster.
- Kim, H., Kim, G. J., Park, H. W., & Rice, R. E. (2007). Configurations of relationships in different media: FTF, email, instant messenger, mobile phone, and SMS. *Journal of Computer-Mediated Communication*, 12(4), 1183-1207.
- Mattanah, J. F., Hancock, G. R., & Brand, B. L. (2004). Parental attachment, separation-individuation, and college student adjustment: A structural equation analysis of mediational effects. *Journal of Counseling Psychology*, 51(2), 213-225.
- Mattanah, J. F., Lopez, F. G., & Govern, J. M. (2011). The contributions of parental attachment bonds to college student development and adjustment: A meta-analytic review. *Journal of Counseling Psychology*, 58(4), 565-596.
- Mattern, K. & Wyatt, J. N. (2009). Student choice of college: How far do students go for an education? *Journal of College Admission*, 203, 18-29.
- Noller, P., & Bagi, S. (1985). Parent-adolescent communication. *Journal of Adolescence*, 8(2), 125-144.
- Quan-Haase, A. (2007). University students' local and distant social ties: Using and integrating modes of communication on campus. *Information, Communication & Society*, 10(5), 671-693.
- Ramsey, M. A., Gentzler, A. L., Morey, J. N., Oberhauser, A. M., & Westerman, D. (2013). College students' use of communication technology with parents: Comparisons between two cohorts in 2009 and 2011. *Cyberpsychology, Behavior, and Social Networking*, 16(10), 747-752.
- Short, J., Williams, E., & Christie, B. (1976). *The social psychology of telecommunications*. London: John Wiley.
- Smith, M. E., Nguyen, D. T., Lai, C., Leshed, G., & Baumer, E. P. S. (2012). Going to college and staying connected: Communication between college freshmen and their parents. *CSCW'12: Proceedings of the ACM 2012 conference on computer supported cooperative work* (pp. 789-798). New York: ACM.
- Wei, R., & Lo, V. H. (2006). Staying connected while on the move: Cell phone use and social connectedness. *New Media and Society*, 8(1), 53-72.
- Wintre, M. G., & Yaffe, M. (2000). First-year students' adjustment to university life as a function of relationships with parents. *Journal of Adolescent Research*, 15(1), 9-37.
- Yang, C. C., Brown, B. B., & Braun, M. T. (2013). From Facebook to cell calls: Layers of electronic intimacy in college students' interpersonal relationships. *New Media and Society*. Advance online publication.